



1623 #8

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appln. Serial No.: 10/001,453
Filing Date: October 22, 2001
Applicant(s): FOX et al.
Title: **MODIFIED ACYL CARRIER PROTEINS**

Group Art Unit: 1623
Examiner: Unknown
Attorney Docket No.: 09820.188

INFORMATION DISCLOSURE STATEMENT

RECEIVED

JUN 13 2002

TECH CENTER 1600/2900

Box: Information Disclosure Statement
Assistant Commissioner for Patents
Washington, D.C. 20231

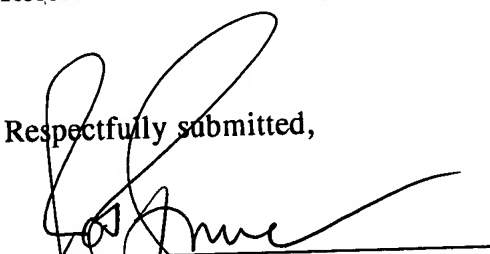
To the Commissioner:

Pursuant to 37 C.F.R. 1.56, applicants submit herewith patents, publications or other information of which they are aware that they believe) may be material to the examination of this application, and in respect of which there may be a duty to disclose. The following sections are being submitted for this Information Disclosure Statement:

- ☒ Form PTO-1449
- ☒ Patents or Publications

Applicants respectfully request that these publications be expressly considered during the prosecution of this application and made of record herein and appear among the "References Cited" on any patent to issue herefrom.

Respectfully submitted,


Joseph T. Leone, Reg. No. 37,170
DEWITT ROSS & STEVENS S.C.
Firstar Financial Centre
8000 Excelsior Drive, Suite 401
Madison, Wisconsin 53717-1914
Telephone: (608) 831-2100
Facsimile: (608) 831-2106

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as First Class mail in an envelope addressed to:

Box: Information Disclosure Statement
Assistant Commissioner for Patents
Washington, D.C. 20231

Date of Deposit: 6-3-02

Signature: Marcia Layton

JUN 11 2002

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 3

RECEIVED
JUN 18 2002
TECH CENTER 1600/2900

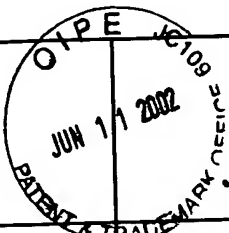
Complete if Known	
Application Number	10/001,453
Filing Date	October 22, 2001
First Named Inventor	Brian G. Fox
Group Art Unit	1623
Examiner Name	Unknown
Attorney Docket Number	09820.188

U.S. PATENT DOCUMENTS						
Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code (if known)			

FOREIGN PATENT DOCUMENTS								
Examiner Initials	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number	Kind Code (if known)				

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T
		ABITA, J. P., LAZDUNSKI, M. & AILHAUD, G. (1971). Structure-function relationships of the acyl-carrier protein of <i>Escherichia coli</i> . <i>Eur. J. Biochem</i> 23, 412-420.	
		ARISTIDOU, A. A., SAN, K. & BENNETT, G. N. (1999). Improvement of biomass yield and recombinant gene expression in <i>Escherichia coli</i> by using fructose as the primary carbon source. <i>Biotechnol. Prog.</i> 15, 140-145.	
		BALDWIN, J. E., BIRD, J. W., FIELD, R. A., O'CALLAGHAN, N. M., SCHOFIELD, C. J. & WILLIS, A. C. (1991). Isolation and partial characterisation of ACV synthetase from <i>Cephalosporium acremonium</i> and <i>Streptomyces clavuligerus</i> : Evidence for the presence of phosphopantothenate in ACV synthetase. <i>J. Antibiot. (Tokyo)</i> 44, 241-248.	
		BRADFORD, M. M. (1976). A rapid and sensitive method for the quantitation of microgram quantities of protein utilizing the principle of protein-dye binding. <i>Anal. Biochem.</i> 72, 248-254.	

		BROADWATER, J. A., AI, J., LOEHR, T. M., SANDERS-LOEHR, J. & FOX, B. G. (1998). Peroxodiferric intermediate of stearyl-acyl carrier protein Δ^9 desaturase: oxidase reactivity during single turnover and implications for the mechanism of desaturation. <i>Biochemistry</i> 37 , 14664-14671.
		BROADWATER, J. A., ACHIM, C., MÜNCK, E. & FOX, B. G. (1999). Mössbauer studies of the formation and reactivity of a quasi-stable peroxo intermediate of stearyl-acyl carrier protein Δ^9 -desaturase. <i>Biochemistry</i> 38 , 12197-12204.
		BROADWATER, J. A. & FOX, B. G. (1999). Spinach holo-acyl carrier protein: overproduction and phosphopantetheinylation in <i>Escherichia coli</i> BL21(DE3), in vitro acylation, and enzymatic desaturation of histidine-tagged isoform I. <i>Protein Express. Purif.</i> 15 , 314-326.
		ELLMAN, G. L. (1959). Tissue sulfhydryl groups. <i>Arch. Biochem. Biophys.</i> 82 , 70-77.
		FOX, B. G., SHANKLIN, J., SOMERVILLE, C. & MÜNCK, E. (1993). Stearyl-acyl carrier protein Δ^9 desaturase from <i>Ricinus communis</i> is a diiron-oxo protein. <i>Proc. Natl. Acad. Sci., USA</i> 90 , 2486-2490.
RECEIVED JUN 13 2002 TECH CENTER 1600/2900		FOX, B. G., SHANKLIN, J., AI, J., LOEHR, T. M. & SANDERS-LOEHR, J. (1994). Resonance Raman evidence for an Fe-O-Fe center in stearyl-ACP desaturase. Primary sequence identity with other diiron-oxo proteins. <i>Biochemistry</i> 43 , 12776-12786.
		FOX, B. G. (1997). Catalysis by non-heme iron. In <i>Comprehensive Biological Catalysis</i> (Sinnott, M., ed.), pp. 261-348. Academic Press, London.
		GARSIN, D.A., SIFRI, C.D., MYLONAKIS, E., QIN, X., SINGH, K.V., MURRAY, B.E., CALDERWOOD, S.B., and AUSUBEL, F.M. (2001) <i>Proceedings of the National Academy of Sciences USA</i> 98 , 10892-10897.
		HAAS, J. A. & FOX, B. G. (1999). Role of hydrophobic partitioning in substrate selectivity and turnover of the <i>Ricinus communis</i> stearyl-ACP Δ^9 desaturase. <i>Biochemistry</i> 38 , 12833-12840.
		HILL, R. B., MACKENZIE, K. R., FIANAFAN, J. M., CRONAN, J. E. & PRESTEGARD, J. H. (1995). Overexpression, purification, and characterization of <i>Escherichia coli</i> acyl carrier protein and two mutant proteins. <i>Protein Express. Purif.</i> 6 , 394-400.
		HOANG, T.T., MA, Y., STERN, R.J., MCNEIL, M.R., and SCHWEUZER, H.P. (1999) <i>Gene</i> 237 , 361-371.
		KEATING, D. H., CAREY, M. R. & CRONAN, J. E., JR. (1995). The unmodified (apo) form of <i>Escherichia coli</i> acyl carrier protein is a potent inhibitor of cell growth. <i>J. Biol. Chem.</i> 270 , 22229-22235
		KENNER, A. (1971). Fluorescent derivatives of nitrotyrosine. Model compounds for fluorescent reporter groups in proteins. <i>Biochemistry</i> 10 , 545-550.
		KIM, Y. & PRESTEGARD, J. H. (1990). Refinement of the NMR structures for acyl carrier protein with scalar coupling data. <i>Proteins: Struct. Funct. Genet.</i> 8 , 377-385.
		KRAULIS, P. J. (1991). MOLSCRIPT: a program to produce both detailed and schematic plots of protein structures. <i>J. Appl. Crystal.</i> 24 , 946-950.
		LAWSON, D. M., DEREWENDA, U., SERRE, L., FERRI, S., SZITTNER, R., WEI, Y., MEIGHAN, E. A. & DEREWENDA, Z. S. (1994). Structure of a myristoyl-ACP-specific thioesterase from <i>Vibrio harveyi</i> . <i>Biochemistry</i> 33 , 9382-9388.



- LINDQVIST, Y., HUANG, W., SCHNEIDER, G. & SHANKLIN, J. (1996). Crystal structure of stearoyl-acyl carrier protein Δ^9 desaturase from castor seed and its relationship to other diiron proteins. *EMBO J.* 15, 4081-4092.
- MAGNUSON, K., JACKOWSKI, S., ROCK, C. O. & CRONAN, J. E., JR. (1993). Regulation of fatty acid biosynthesis in *Escherichia coli*. *Annu. Rev. Microbiol.* 57, 522-542.
- MILLER, M.B., and BASSLER, B.L. (2001), *Annual Review of Microbiology.* 55, 165-199.
- PRESCOTT, D. J. & VAGELOS, P. R. (1972). Acyl carrier protein. *Adv. Enzy. and Rel. Areas of Mol. Bio.* 36, 269-311
- ROCK, C. O. & GARWIN, J. L. (1979). Preparative enzymatic synthesis and hydrophobic chromatography of acyl-acyl carrier protein. *J. Biol. Chem.* 254, 7123-7128.
- RUSNAK, F., SAKAITANI, M., DRUECKHAMMER, D., REICHERT, J. & WALSH, C. T. (1991). Biosynthesis of the *Escherichia coli* siderophore enterobactin: Sequence of the *entF* gene, expression and purification of EntF, and analysis of covalent phosphopantetheine. *Biochemistry* 30, 2916-2927.
- SAMBROOK, J., FRITSCH, E. F. & MANIATIS, T., Eds. (1989). *Molecular Cloning. A Laboratory Manual*. 2nd edit. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY. (COPY NOT PROVIDED)
- SCHAGGER, H. & VON JAGOW, G. (1987). Tricine-sodium dodecyl sulfate-polyacrylamide gel electrophoresis for the separation of proteins in the range from 1 to 100 kDa. *Anal. Biochem.* 166, 368-379.
- SHANKLIN, J. & CAHOON, E. B. (1998). Desaturation and related modifications of fatty acids. *Annu. Rev. Plant Physiol. Plant Mol. Biol.* 49, 611-641.
- SINGH, P.K., SCHAEFER, A.L., PARSEK, M.R., MONINGER, T.O., WELSH, M.J., and GREENBERG, E.P. (2000) "The Establishment of Biofilms." *Nature* 407, 762-764.
- SOKOLOVSKY, M., RIORDAN, J. F. & VALLEE, B. L. (1966). Tetranitromethane. A reagent for the nitration of tyrosyl residues in proteins. *Biochemistry* 5, 3582-3588.
- SOKOLOVSKY, M., RIORDAN, J. F. & VALLEE, B. L. (1967). Conversion of 3-nitrotyrosine to 3-aminotyrosine in peptides and proteins. *Biochem. Biophys. Res. Commun.* 27, 20-25.
- SPERANDIO, V., TORRES, A.G., GIRON, J.A., and KAPER, J.B. (2001) *Journal of Bacteriology* 183, 5187-5197).
- STUDTS, J. M. & FOX, B. G. (1999). Application of fed-batch fermentation to the preparation of isotopically labeled or selenomethionyl-labeled proteins. *Protein Express. Purif.* 16, 109-119.
- SUMMERS, R. G., ALI, A., SHEN, B., WESSEL, W. A. & HUTCHINSON, C. R. (1995). Malonyl-coenzyme A:acyl carrier protein acyl-transferase of *Streptomyces glaucescens*: A possible link between fatty acid and polyketide biosynthesis. *Biochemistry* 34, 9389-9402.
- YANG, Y., BROADWATER J. A., PULVER, S. C., FOX, B. G. & SOLOMON, E. I. (1999). Circular dichroism and magnetic circular dichroism studies of the reduced binuclear non-heme iron site of stearoyl-ACP Δ^9 desaturase: substrate binding and comparison to ribonucleotide reductase. *J. Am. Chem. Soc.* 121, 2770-2783.

Examiner Signature

Date Considered